

We claim:

1. A double-acting pump for ejecting a product from a container, the pump comprising,

a housing,

a piston with an axial bore axially slideable in the housing, wherein the piston is sealed by a first housing portion,

a hollow piston rod which extends the axial bore of the piston, wherein the hollow piston rod is displaceable in an opening of a closing cap for the housing and container, wherein the hollow piston rod has at a free end thereof a tightly attached actuating head, wherein, when the actuating head is actuated, the piston is pressed against a restoring spring force toward a connecting pipe piece for an immersion pipe provided in the housing and builds up a pressure in a pressure chamber of the housing which presses a first valve closing piece in the connecting pipe piece against a first valve seat,

wherein the actuating head contains an outlet duct connected to the bore and extending through a check valve to an ejection opening for the product,

wherein at least one opening is provided in a second housing portion between the first housing portion and the closing cap,

wherein, in a non-actuated state of the pump, the piston releases as a result of the restoring spring force a passage between the pressure chamber and the at least one opening in the second housing portion, and

wherein the connecting pipe piece comprises a second valve seat and a second valve closing piece, wherein, when the double-acting pump is in a position in which the actuating head is lower than the connecting pipe piece, the second valve closing piece assumes its closing position at the second valve seat, and, in an inverted position in which the actuating head is higher than the connecting pipe piece, the second valve closing piece assumes an open position.

2. The double-acting pump according to claim 1, wherein the passage is formed by at least one axial groove in an inner side of the middle housing portion between the first and the second housing portions.

3. The double-acting pump according to claim 1, wherein the second valve closing piece is actuatable by its own weight.